

DACTYLOSTIGMA, A NEW GENUS OF CONVULVULACEAE FROM MADAGASCAR

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Styles and stigma structures have classically been important for generic delimitation of the Convolvulaceae. While these characters may have been overemphasized in some species, they are valuable criteria (Linnaeus, 1763; Endlicher, 1838; Vatke, 1876; Radlkofer, 1883; Afzelius, 1929; van Ooststroom, 1964). Recently several authors have demonstrated correlations between stigma and style morphology and other organs, thus providing new support for use of these gynoecial characters in generic classification (Lewis & Oliver, 1965; Austin, 1970; Robertson, 1971).

The stigmas of a collection from Madagascar by Humbert & Swingle (5368) are unique to the family (Fig. 1); they approach those found in the Australian genus Polymeria, but are not exactly like them (Fig. 2). The general aspect of the Madagascar specimen suggests affinity with the genus Calycobolus (House, 1907; Heine, 1963; Austin, 1971); enlarged bracteose sepals are common to them as is the liana habit. Stigma structure is, however, markedly different in Calycobolus and the Madagascar specimen (Fig. 1,3). Detailed examinations of the convolvulaceous genera in the Field Museum (Chicago), the Missouri Botanical Garden (St. Louis), and the Smithsonian Institution (Washington) and a thorough perusal of the literature (Austin, 1970, 1971, 1973) revealed no other plants in the family which could be considered congeneric with the Humbert & Swingle collection. Dr. B. Verdcourt (pers. comm.) has not (1970) examined material in England which conforms to the Humbert & Swingle collection.

The tribe Poraneae may well contain additional genera when examined in more detail. Verdcourt (pers. comm.) has been studying some of the species in the tribe and has found considerable diversity and generic confusion. The entire tribe needs detailed study.

While it is usually not advisable to describe new taxa from single collections, I feel that the divergence of the Madagascar collection from other Convolvulaceae justifies such description.

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DACTYLOSTIGMA D. Austin, gen. nov.; affine tribus Poraneae parietibus chartaceis fructus indehiscentis. Ab generibus aliis corollis campanulatis, multis lobis stigmatorum, ovariis unilocularibus, foliis linearibus sessilibus differt. Typus generis:

Dactylostigma linearifolia D. Austin, sp. nov.; species Calycoboli simile, differt multis lobis stigmatorum foliisque linearibus. Fig. 1.

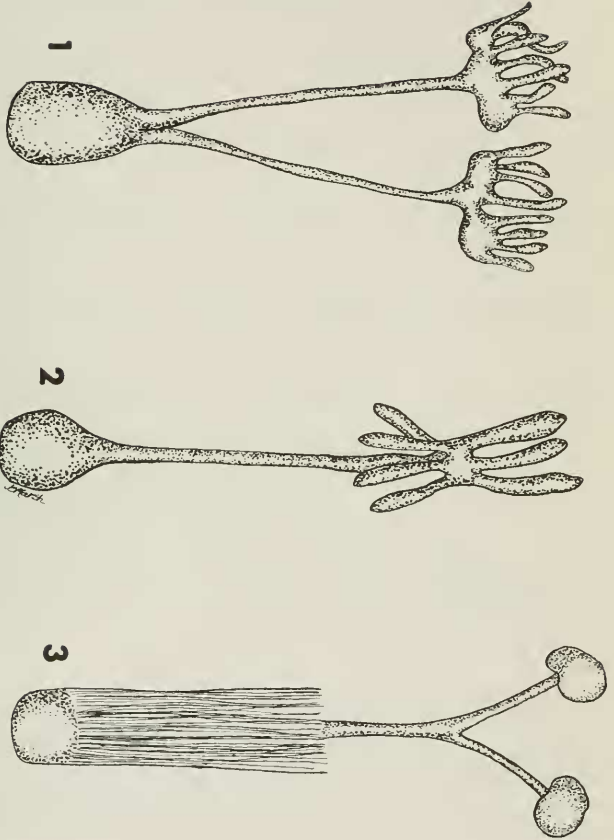
Frutex scandens circiter 2 m altus, ramis glabris, cinereis; foliis sessilibus, linearibus, 2-2.5 cm longis, 1.7 mm latis, pubescentia trichomatum parvorum dispersorum; inflorescenti subracemosa vel ex floribus solitariis in axillis foliorum constanti; floribus subsessilibus; sepalis duobus extimis 13-14 mm longis, 11-12 mm latis, sepalo tertio parviore, 10 mm longo, 5 mm lato, subfalcato, sepalis duobus intimis inaequalibus, oblongis vel oblongo-falcatis, 7-8 mm longis, 2 mm latis, sepalis ubique trichomata adpressa tectis, nervaturis sepalorum prominentibus; corolla campanulatis, 7 mm longis, ad medium usque lobatis; staminibus usque ad sinus attingentibus; filamentis subulatis, 2 mm longis, glabris, 1 mm supra basin corollae affixis; antheris deltoideis, 0.5 mm longis; ovario immaturo non visa; stylis 2, imo libris, 2.5 mm longis; stigmatibus in aliquot ramos lineares divisis; ramis usque ad 1 mm longis; fructibus ut videtur unilocularibus, ovulis 4, uno maturescenti, 3 abortivis; parietibus fructus chartaceis; parietibus seminis non-lignescentibus tenuibus; endospermio sparse; embryo longiplicato; radícula 3 mm longa; cotyledonibus foliaceis, 3-4 mm longis, 3 mm latis. Typus speciei.

Type: Madagascar, delta de la Linta (cote sud-ouest), arbuste sarmenteus 2 m, alt. 1-10 m, 24-28 Aug 1928, Humbert & Swingle 5368 (Holotype MO).

In order to properly orient this genus in the tribe Poraneae, the following artificial key is provided. The key should not be interpreted as revisionary and is not intended to suggest relationships of any kind; it is solely for the purpose of identification. Herbarium material as well as published descriptions of all genera except Rapona have been used to construct the key. I have been unable to obtain or examine material of the endemic Madagascar genus Rapona (but see Verdcourt, 1972).

ARTIFICIAL KEY TO GENERA IN THE TRIBE PORANAEAE

- a. Sepals of flower subequal in length, accrescent in fruit, equal or unequal in fruit. Leaves mostly rounded to cordate at the base.
- b. Calyx gamosepalous, anthers ellipsoid, lower parts of the disc swollen Rapona Baillon



FIGURES 1-3. Some gynoecia in the Convolvulaceae.

Fig. 1. Dactylostigma (from Humbert & Swingle 5368 MO).

Fig. 2. Polymeria (redrawn from Englicher, 1838).

Fig. 3. Calycobolus lanulosus D. Austin (from Belem & Mendes 215 US). Semidiagrammatic; not drawn to scale.

- bb. Calyx lobes free, anthers linear to oblong, disc more or less evolute. Porana Burmann
- aa. Sepals of flower markedly different in size, accrescent in fruit, the outer two or three sepals large and bracteoid in fruit. Leaves mostly rounded, cuneate or acute at the base.
- c. Stigma one per styler branch, globose, subglobose or ellipsoid, corolla funnelform, tubular or urceolate, leaves elliptic to ovate or cordate, petiolate.
- d. Stamens equal in length, pollen 3-colpate, plants of the New World Calycobolus Willd. (in part)
- dd. Stamens unequal in length, pollen pantocolpate or pantoporate, plants of the Old World.
- e. Style one, ovary subtended by a "gynophore", plants of Madagascar . . Cardiochlamys Oliver
- ee. Style with two branches, ovary without a "gynophore", plants of Africa.
- f. Apex of fruiting sepals emarginate, stigmas ellipsoid, corolla funnelform, plants of the Cameroon Dipteropeltis Hallier f.
- ff. Apex of fruiting sepals acute to acuminate, stigmas globose, corolla funnelform, tubular or urceolate, plants widely spread in Africa Calycobolus (in part)
- cc. Stigmas of several linear lobes per style, corolla campanulate, leaves linear Dactylostigma D. Austin

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AEGIPHILA MOLLIS var. SURFACEANA (Moldenke) Moldenke, stat. nov.
Aegiphila surfaceana Moldenke, *ull. Torrey Bot. Club* 58: 462--
 463. 1931.

ERIOCAULON REITZII Moldenke & Smith, sp. nov.

Herba crassa, brevissime caulescens. Radices simplices, crassae, spongiosae, albae. Folia erecto-fasciculata, 11--14 cm. longa, basi dilatata; laminis suboblongis, apice attenuatis, medio 8--10 mm. latis, planis subcoriaceis, opacis, glabris. Pedunculi 2 vel 3, ad 35 cm. alti, apice 1 mm. diametro, paulo torti, 8-costati, glabri; vaginis laxis, folia paulo superantibus, apice acute bilobatis. Capitula per anthesin globosa 8 mm. diametro dense persistenterque albo-villosa. Bracteae involucri reflexae late ovatae acutae ad 3 mm. longae flavae glabrae; bracteis florigeris sublanceolatis acutis basi longe attenuatis, flores subaequantibus, apice dense albo-villosis. Flores subsessiles; masculinorum sepalis 3 cuneato-spathulatis apice late rotundatis et dense albo-villosis, posterioribus alto-connatis sed facile fissis; petalorum lobis subaequalibus spathulatis intus dense albo-villosis et maculam unicam nigram ornatis; antheris nigris florum femineorum sepalis petalisque eis masculinis similibus.

The type of this species was collected by Raulino Reitz and Roberto M. Klein (no. 5428) at Rancho Queimado in the Serra da Boa Vista, Santa Catarina, Brazil, at an altitude of 1200 meters, on October 24, 1957, and is deposited in the United States National Herbarium, Smithsonian Institution, Washington, D. C.

PAEPALANTHUS CATHARINAE var. HATSCHBACHI (Moldenke) Moldenke & Smith, stat. nov.

Paepalanthus hatschbachi Moldenke, *Lloydia* 13: 224--225. 1950.

PAEPALANTHUS HILAIREI var. POHLIANUS Moldenke, *Phytologia* 25: 229 & 241, hyponym. February 6, 1973; nom. nov.

Paepalanthus hilairei var. Körn. in *Mart., Fl. Bras.* 3 (1): 332. 1863.

PAEPALANTHUS LANGSDORFFII var. CARACENSIS Moldenke, var. nov.

Haec varietas a forma typica speciei bracteis involucrantibus perspicue subrotundis recedit.

This variety differs from the typical form of the species in its conspicuously broadly rotund involucral bractlets.

The type of the variety was collected by H. S. Irwin, R. M. Harley, and E. Onishi (no. 29110) in wet places in a steep valley on the sandstone summit of Serra da Caraça, with soil-filled cracks and depressions, adjacent precipices, and steep valleys,